CBRN PAPR Standard Development

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NIOSH/NPPTL Public Meeting

Hilton Garden Inn, Canonsburg, Pa

Standard Development

- Existing NIOSH or Military Standards are not completely applicable to meet a terrorism agent threat
- Inherent differences between NIOSH and Military Standards
  - Purpose
  - Target user groups
  - Hazards
  - Operation
  - Protection

CBRN PAPR Standard Development

Goal:

Develop a NIOSH/NPPTL powered air purifying respirator standard that addresses CBRN materials identified as inhalation hazards and/or possible terrorist hazards for emergency responders.

CBRN PAPR Standard Development

A. Hazard analysis
B. Protection
C. Human factors and environmental factors
D. Standards concept definition
E. Test requirements and research
F. Testing and validation
G. Quality assurance requirements
H. Public process

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- 42 CFR, Part 84 – applicable sections
- Requirements derived from other standards and specifications
- Special CBRN PAPR requirements

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- Applicable sections of 42 CFR, Part 84
  - 42 CFR Part 84, Subparts A, B, D, E, F, and G
  - 42 CFR Part 84, Subpart KK:

Paragraphs 84.1101; 84.1103; 84.1130(b); 84.1131–84.1138; 84.1150; 84.1154; 84.1155

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Requirements based on existing National and International standards

- Respirator containers
  - Markings and labeling
  - Minimum packaging configuration
- General construction
  - Battery requirements
  - Low flow / Pressure Indicator
  - Operational controls

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Requirements based on existing National and International Standards

- Breathing performance
  - Moderate and high breathing rate performance
  - Breathing performance requirement
  - Test time
- Field of view
- Haze, luminous transmittance, and abrasion resistance

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Requirements based on existing National and International Standards

- Low temperature and fogging
- Communications
- Carbon dioxide
- Hydration
- Noise levels

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- Special CBRN requirements
  - Gas life testing (incl. panic demand)
  - CWA penetration and permeation
  - LRPL
  - Practical performance

CBRN PAPR Standard Development

- Being conducted in public forum
- Meetings with
  - Stakeholders
  - Manufacturers
- Use of website for concept papers
  - http://www.cdc.gov/niosh/npptl

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Docket and Meeting Comments

Public meetings

- October 2003
- May 2004

Docket

- 10 submissions

CBRN PAPR Respirator Concept Docket and Meeting Comments SUMMARY BY TOPIC

- Abrasion resistance
- Airflow
- Battery requirements
- Blower requirements
- Breathing resistance
- Canister interchangeability
- Canister shelf life
- Carbon dioxide
- Container requirement
- Crisis mode
- Decontamination and maintenance
- Environmental conditioning
- Facepiece pressure
- Harness design
- Intrinsic safety
- Labels
- Low flow indicators
- LRPL
- Noise levels
- Operational controls
- Particulate canister
- Required components
- Service life testing

CBRN PAPR Standard Development Docket and Meeting Comments Air Flow (1 of 2)

COMMENTS	HOW ADDRESSED
• Consider different flow rate requirements for different work rates of users	• *2 Breathing rate performance categories established (moderate and high)*
• Constant flow PAPRs and pressure-demand PAPRs should have different test criteria due to difference in design	• *Gas life capacity is tested at different flow rates for constant flow and demand responsive units*

CBRN PAPR Standard Development Docket and Meeting Comments Air Flow (2 of 2)

COMMENTS	HOW ADDRESSED
• Consider performing gas life testing at the average flow through each filter with the entire unit mounted on breathing machine	• *Gas life capacity is tested at different flow rates for constant flow and demand responsive units*
• Clarification needed, is 115 Lpm the minimum flowrate required, or can the manufacturer specify another?	• *Manufacturer may specify based upon system design*

CBRN PAPR Standard Development Docket and Meeting Comments Decontamination / Maintenance

COMMENTS

- Does the standard include specific requirements for decontamination and maintenance?

HOW ADDRESSED

- Storage and Maintenance procedures are required in the manufacturers User Instructions
- Decontamination procedures are not a standard requirement